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WATER PLAY PUMP

[0001] The present invention concerns a fountain pump with a housing, which has a housing wall, which is constructed at least partially as a filter, through which the water can flow into the housing; with a first outlet, through which the water can be pumped out of the housing; with a suction connection; with a pumping device for sucking in water and for discharging water; and with a control unit for controlling the pumping device.

[0002] Fountain pumps of this type are widely known and are used, for example, in ponds. They usually stand in the water in the middle of the pond and are used to produce waterworks on the pond. Fountain pumps of this type generally have an essentially vertically standing outlet that forms a fountain connection.

[0003] Fountain pumps of this type have a housing wall, which can be designed in any desired way but is formed as a filter at least in sections to prevent coarse material and debris from entering the pump housing.

[0004] The problem with well-known fountain pumps of this type is that the filter surface is generally limited to the sides of the housing, since support elements are present on the bottom side, and the fountain outlet and various control elements are formed on the upper side. Some regions of the housing must be filter-free for stability reasons, so that in fact only certain sections of the housing wall can ever be used as filters.

[0005] Due to these restricting structural conditions, the filters cannot be designed as large as one would want, so that contamination and obstruction of the filters by coarse material and debris occur after a predeterminable time. This time is so short under practical conditions of use that the user of a fountain pump of this type must deal with the problem of frequently taking the pump out of the water to clean the filter.

[0006] Therefore, the objective of the present invention is to develop a fountain pump whose filter surface is significantly increased using the same housing dimensions.

[0007] In accordance with the invention, this objective is achieved by mounting an additional, detachable filter element on the housing.

[0008] An additional, detachable filter element of this type offers many possibilities for creating additional filter surface. For example, the additional, detachable filter element can be installed spatially in front of the actual filter, so that a portion of the water sucked in flows through this additional filter element and relatively coarse material present in the water is retained. An increase in the filter surface also results in longer running times during which cleaning of the filter surfaces is not necessary.

[0009] In accordance with Claim 2, it is advantageous for the additional filter element to have a hinged design, so that it can be secured on the housing in such a way that the filter element rests against the wall of the housing in a first position and is swung away from the wall of the housing like wings in a second position. In this way, the additional filter element can be spatially placed in front of the housing while a secure connection is maintained, so that exact positioning of the wing elements is possible. Another advantage is that the additional filter element has an outside and an inside, each of which is formed as a filter surface. In this way, the filter surface can even be tripled.

[0010] Another advantage is that the additional filter element has a connection for a hose coupling with the suction connection on the housing, so that the additional filter element remains connected with the housing even when it is detached from the housing. In this way, the additional filter element can be installed a distance away from the actual housing in an area in which strong intake of coarse material and debris is expected.

[0011] The latter advantage is also related to a further advantage, namely, that the additional filter element has a control device for setting a waterworks function. Specifically, this makes it possible to utilize the additional filter element not only as a

means of optimizing the running time of the fountain pump but also as a remote control device, for example, for setting the height of a fountain.

[0012] An embodiment of the present invention is described in greater detail below with reference to the drawings.

[0013] Figure 1 shows a schematic perspective view of a fountain pump in accordance with the present invention with the additional filter element detached.

[0014] Figure 2 shows a schematic perspective view of the fountain pump of the invention with the additional filter element swung out from the housing.

[0015] Figure 1 shows a fountain pump 1, which has a housing 3. The housing 3 has a longitudinal axis and in the present embodiment is designed with an essentially oval cross section. The housing 3 has a housing wall 3.1, which is formed on both longitudinal sides of the housing 3 as filter surface 3.2 and filter surface 3.3. The filter surface follows the contour of the housing wall and is thus outwardly convex, corresponding to the essentially oval cross section of the housing 3. The filter surfaces 3.2 and 3.3 are designed with grooves and webs in such a way that coarse material, such as leaves, small twigs, debris, and even small animals, is retained on the filter when pond water is drawn into the housing 3. The bottom of the housing 3 has feet 5 with slotted holes 5.1 formed in them, with which the housing 3 can also be mounted on mounting plates, rocks, etc. On the upper side of the housing, a web 3.7 extends from one end face 3.5 of the housing 3 to the opposite end face 3.6 of the housing 3. The web 3.7 spatially separates the two filter surfaces 3.2 and 3.3 from each other in such a way that they are arranged parallel to and symmetrically about the longitudinal axis. A first outlet 7 is formed on the web 3.7. A telescoping extension 7.1, for example, can be mounted with a water-tight seal on the first outlet 7. A nozzle to produce the fountain is installed at the other end. Snap connections 9, with which two halves of the housing 3 are held together, are also formed on the web 3.7.

[0016] A suction connection 11 is formed on the web face 3.5. The suction connection 11 can be connected with a threaded insert to allow a hose (not shown) to be attached. In the absence of a threaded insert of this type, the suction connection

can be covered with a cover 12. The opposite web face 3.6 is provided with a second outlet 13, from which water can emerge, for example, for a water spout or the like. A controller 15 for this second outlet 13 is formed on the web 3.7. A mounting 16, on which a lighting fixture for the water spout or fountain can be mounted, is also formed on the web 3.7.

[0017] The end faces 3.5 and 3.6 define the maximum outer contour of the oval cross section. The filter surfaces 3.2 and 3.3 lie closer to the longitudinal axis, so that they are positioned a certain radial distance from the outer contour of the end faces 3.5 and 3.6. The purpose of this design is to allow the integration of an additional filter element 17 in the housing 3. This is more clearly illustrated in Figure 2.

[0018] The additional filter element 17 in Figure 1 comprises two filter wings 17.1 and 17.2, which are secured on a central filter connector 17.3. The central filter connector 17.3 has a connection 17.4, by which a hose coupling (not shown) with the suction connection 11 can be produced, so that even when the additional filter element is installed at a distance from the housing 3, the two parts are still functionally connected. A control element 19 is formed on the connection 17.4, with which the first outlet 7 and the second outlet 13 can be controlled in such a way that, for example, the water spout and the height of the fountain can be varied from a location remote from the housing 3.

[0019] In the present embodiment, the filter wings 17.1 and 17.2 of the additional filter element can be secured on the housing 3 in such a way that they form a continuation of the circumference determined by the outer contour of the end faces 3.5 and 3.6 along the entire length of the housing 3. The filter wings 17.1 and 17.2 thus fit into the recessed lateral regions of the filter surfaces 3.2 and 3.3 of the housing 3.

[0020] Furthermore, the additional filter element 17 or the filter wings 17.1 and 17.2 in the present embodiment can be hinged on the upper side of the housing 3 in the vicinity of the web 3.7 in such a way that the filter wings 17.1 and 17.2 can be swung out of a first position, in which the filter wings 17.1 and 17.2 are integrated in the housing in such a way that they are flush with the end faces of the housing (not shown),

and into a second position (see Figure 2), in which the filter wings no longer rest against the filter surfaces 3.2 and 3.3.

[0021] The additional filter element 17 has one filter surface on its upper or outer side and one filter surface on its lower or inner side. As a result, the two opposite main surfaces of the additional filter element 17 and thus of the filter wings 17.1 and 17.2 have their own filter characteristics. In the state shown in Figure 2, in which the filter wings are swung out, the filter surface is approximately tripled.

[0022] The first outlet 7 on the web 3.7 of the housing 3 is designed in such a way that a nozzle (not shown) mounted on it can swivel about 20° in all directions.